RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report

Borehole 41-05-08

Log Event A

Borehole Information

Farm : SX | **Tank :** SX-105 | **Site Number :** 299-W23-127

N-Coord : 35,444 | **W-Coord :** 75,817 | **TOC Elevation :** 661.92

Water Level, ft : | **Date Drilled :** Unknown

Casing Record

Type : Steel-welded | **Thickness :** 0.280 | **ID, in. :** 6

Top Depth, ft. : 0 | **Bottom Depth, ft. :** 130

Equipment Information

Logging System : 2 | **Detector Type :** HPGe | **Detector Efficiency:** 35.0 %

Calibration Date : 03/1995 | **Calibration Reference :** GJPO-HAN-1

Logging Information

Log Run Number : 1 | **Log Run Date :** 5/24/1995 | **Logging Engineer:** Gary Lekvold

Start Depth, ft.: 0.0 | **Counting Time, sec.:** 100 | **L/R :** L | **Shield :** Y

Finish Depth, ft. : 42.5 | **MSA Interval, ft. :** 0.5 | **Log Speed, ft/min.:** n/a

Log Run Number : 2 | **Log Run Date :** 5/25/1995 | **Logging Engineer:** Gary Lekvold

Start Depth, ft.: 124.0 | **Counting Time, sec.:** 100 | **L/R :** L | **Shield :** N

Finish Depth, ft. : 41.5 | **MSA Interval, ft. :** 0.5 | **Log Speed, ft/min.:** n/a

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Analysis Information

Analyst : D.C. Stromswold

Data Processing Reference : Data Analysis Manual Ver. 1 Analysis Date : 8/11/1995

Analysis Notes :

This borehole was deepened 75 ft to 135 ft in 1973, and a grout plug was placed in the bottom 5 ft of the borehole.

The borehole was logged in two runs: run 1 from 0 to 42.5 ft and run 2 from 124 to 41.5 ft.

The casing thickness was 0.31 in.; correction factors for 0.33-in steel casing were used during analysis.

Increases in the K-40, U-238, and Th-232 concentrations near 78 ft probably indicate a lithology change.

Cs-137 was the only man-made radionuclide detected. High Cs-137 concentrations in the interval from 6 to 9.5 ft caused the tool to saturate above about 140 pCi/g. Although a tungsten shield was added around the dectector to reduce the gamma-ray counts, the tool still saturated. No data are included on the plots from the shielded run, because the shield only provided limited extended operating range. Small, continuous Cs-137 concentrations of about 0.3 to 0.8 pCi/g occurred in the interval from 42 to 48 ft and intermittently throughout the borehole.

Log Plot Notes:

Three log data plots are provided. The Cs-137 activity is provided in a separate plot to present the details of Cs-137 activity and contamination distribution. The error of the Cs-137 activity determination is shown by error bars that represent the 95-percent confidence interval. The calculated MDA is shown on the plot as open circles. If the calculated activity is less than the MDA, it is considered as a non-detect and the data is not reported.

A plot of the naturally occurring radionuclides potassium, uranium, and thorium (K-40, U-238, and Th-232) is provided to allow correlation of these data with geologic information. On the Th-232 plot, the MDA value is shown as zero at some depth locations. The zero value was the result of an anomaly in the commercial spectrum analysis software which has been corrected by the vendor. Because the MDA calculation at these few points is not significant relative to the intended use of the plot, the data were not reprocessed and corrected. Therefore, these MDA data points should be ignored.

The gaps from 6 to 9.5 ft resulted from tool saturation due to high Cs-137concentration.

A combination plot of the individual radionuclide activities is provided that includes the total gamma-ray count rate calculated from the spectral data and the WHC Tank Farm gross gamma-ray log data acquired with the gross gamma-ray logging systems.